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166619

Five-Year Review Report

First Five-Year Review Report
for
Bennett's Dump
Monroe County, Indiana
August 2002

PREPARED BY:

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Region V
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Date:

8/22/02

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List of Acronyms

ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIC	Citizens Information Committee
COPA	Citizens Opposed to PCB Ash
CFR	Code of Federal Regulations
IDEM	Indiana Department of Environmental Management
NPL	National Priorities List
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OSC	On-Scene Coordinator
PCBs	Polychlorinated biphenyls
ROD	Record of Decision
RD/RA	Remedial Design/Remedial Action
TAG	Technical Assistance Grant
U.S. EPA	United States Environmental Protection Agency

Executive Summary

The remedy for the Bennett's Dump site in Monroe County, Indiana, included the removal of PCB contaminated soil to an approved landfill, off-site incineration of capacitors, backfilling of the excavated area with clean fill, placement of a 12-inch soil cover over the excavated area, a small sediment removal in Stout's Creek, and the implementation of institutional controls. The site achieved "construction completion"[1] with the signing of the Preliminary Close Out Report on September 25, 2000. The five-year review is being completed sooner than September 2005, because PCBs continue to be released from springs into Stout's Creek.

The conclusion of this five-year review is that the remedy was constructed in accordance the requirements of the ROD Amendment but the cleanup has not eliminated or reduced PCBs from being released from springs onsite into Stout's Creek. Additional investigation of groundwater is required and the results of that investigation will determine whether future groundwater remediation is required. At this time, the U.S. EPA cannot determine whether the remedy is protective of human health and the environment until additional information is available on the site hydrology and a risk analysis is completed, both of which should be completed within eighteen months from the date of this Five Year Review.

[1]The term "construction completion" refers to sites where physical construction has been completed. This term is in contrast to "site completion" which refers to sites where all cleanup actions have been implemented and cleanup goals have been achieved. At such sites, operation and maintenance are the only activities remaining.

FIVE-YEAR REVIEW SUMMARY FORM

Site name (from WasteLan): Bennett's Dump		
EPA ID (from WasteLan): IND006418651		
Region: 5	**State:** IN	**City/County:** Bloomington/Monroe
NPL status: Final		
Remediation status: Construction Pursuant to ROD Amendment Completed		
Multiple OU's: No	**Construction completion date:** September 25, 2000	
Has site been put into reuse: No		
Lead Agency: U.S. EPA		
Author name: Thomas Alcamo		
Author title: Remedial Project Manager	**Author affiliation:** U.S. EPA Region 5	
Review period: 01/02/02 to 08/31/02		
Date(s) of site inspection: July 10, 2002		
Type of Review: Pre-SARA		
Review number: first		
Triggering action: Other (Groundwater contamination remains after completion)		
Triggering action date (from Wastelan): 09/25/00		
Due date (five years after triggering date): 09/25/05		

FIVE-YEAR REVIEW SUMMARY FORM, cont'd.

Issues:

Erosion of soil cover and lack of vegetation in some areas of the soil cover.

Poor drainage with off-site surface water eroding portions of the soil cover.

PCBs being released from springs onsite into Stout's Creek.

Recommendations and Follow-up Actions:

Soil cover was repaired with the placement of new clean fill and liners were placed over the area where water from the springs traveled over the site to eliminate erosion of the soil cover.

Surface water runoff was channeled around the site to prevent water from eroding the surface soil cover.

Viacom is implementing a groundwater investigation and based upon the results, a determination will be made if the ROD Amendment will require modification.

Protectiveness Statement(s):

The continuing release of PCBs from the springs on the Bennett's Dump site into Stout's Creek requires further investigation. A protectiveness determination cannot be made at this time due to the continuing release of PCBs into Stout's Creek. A Groundwater investigation is underway to obtain the necessary data to evaluate the continuing release of PCBs.

Long-term Protectiveness:

Long-term protectiveness of the remedial action will be verified once the groundwater investigation plan has been completed and a determination is made regarding modification of the Bennett's Dump ROD Amendment.

Other Comments:

Implementation of deed restrictions has been delayed due to the groundwater investigation underway. The deed restrictions will be reevaluated once a determination is made regarding a modification of the Bennett's Dump ROD Amendment.

Bennett's Dump Superfund Site
Monroe County
First Five-Year Review Report

I. Introduction

The purpose of the five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and makes recommendations to address them.

The Agency is preparing this five-year review pursuant to CERCLA Section 121 and the National Contingency Plan (NCP). CERCLA Section 121 states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action* ***no less often*** *than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section 104 or 106, the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The agency interpreted this requirement further in the NCP, 40 CFR Section 300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such actions no less often than every five years after the initiation of the selected remedial action.*

The United States Environmental Protection Agency (U.S. EPA), Region V conducted a five-year review of the remedial actions implemented at the Bennett's Dump site in Monroe County, Indiana. This report documents the results of the review. The Indiana Department of Environmental Management (IDEM) and Monroe County Health Department provided support in the development of this five-year review.

This is the first five-year review for the Bennett's Dump site. Construction was completed at the Bennett's Dump site on September 25, 2000. The site soils excavation was completed in the fall of 1999 and a small sediment removal in Stout's Creek was subsequently completed in September 2000. The five-year review is being completed due to the fact that PCBs are being released from springs on the Bennett's Dump site which flow directly into Stout's Creek. Even

though the site soils were cleaned up to low occupancy industrial cleanup levels for PCBs, the cleanup has not sufficiently mitigated the releases.

II. Site Chronology

Table 1 - Chronology of Site Events

Event	Date
Bennett's Stone Quarry used as a landfill for Westinghouse electrical capacitors	1960's
Initial site inspection by U.S. EPA	May 12, 1983
First interim remedial measures consisting of removal off-site of visible capacitors and stained soils with placement of clay cover over site	June 1983
Consent Decree signed for the incineration of PCB contaminated material at six sites in or near Bloomington, Indiana (Bennett's Dump one of six)	August 22, 1985
State of Indiana passes law forbidding the review of the incinerator permit, preventing implementation of incineration remedy	1991
The Consent Decree parties (Westinghouse, U.S. EPA, State of Indiana, Monroe County, and City of Bloomington) agree to explore other remedies for the six Consent Decree sites through the operating principals	February 4, 1994
Due to a lack of progress on developing new remedies, Federal Judge S. Hugh Dillin issues judicial order stating that all source control for the six sites must be completed by December 31, 1999. Assigns Special Master (Magistrate Judge Kennard Foster) to oversee progress.	November 1997
ROD Amendment signed for the cleanup of the Bennett's Dump site. Site remediated to low occupancy/industrial standards for PCBs with soil removed to off-site landfill and capacitors incinerated off-site.	October 16, 1998
Consent Decree parties make progress in negotiations for the cleanup of the six sites and Federal Judge S. Hugh Dillin agrees to extend deadline to December 31, 2000.	February 1999
Approval of Remedial Design/Remedial Action Work Plan	August 1999
Construction begins for phase 1 cleanup of Bennett's Dump (excluding sediment cleanup in Stout's Creek)	August 1999
Approval of Remedial Design/Remedial Action Work Plan for sediment cleanup in Stout's Creek	September 2000
Preliminary Close-Out Report signed	September 25, 2000
Long-Term Groundwater Monitoring Plan approved	April 22, 2002
Groundwater Investigation Plan approved	April 22, 2002

III. Background

Physical Characteristics

Bennett's Dump is located approximately 2.5 miles northwest of Bloomington, Indiana in Monroe County. The site is located in a former limestone quarrying area previously known as Bennett's Quarry and is in a rural setting. Stout's Creek is on the west border of the site with quarry access roads to the south and east. Surrounding the site are a number of abandoned quarry pits filled with water and large limestone blocks and rubble. Adjacent land to the west of the site is agricultural. New highway construction for the I 37/46 bypass is occurring to the south and west of the site which may change the current rural setting. See Figure 1.

The main area of the Bennett's Dump site is 3.5 acres in size and another smaller area, referred to as the satellite area is located approximately one hundred feet to the east of the main area. The satellite area is approximately a half-acre in size. A third small area (approximately 30 by 60 feet) 750 feet north of the main area and at the gate was remediated under the original Consent Decree. A 1992 U.S. EPA sampling event for the third area showed no detections of PCBs and confirmed that no further action was required.

Land and Resource Use

The land in the vicinity of Bennett's dump was used for quarrying operations. Bennett's Quarry was privately owned and operated by Edwin Bennett until it was sold to the Star Stone Company in 1987. The quarry is inactive and produced finished building stone and crushed stone. The inactive stone mill is located within 50 feet of the southwest corner of the main site.

The current land use for the surrounding area is a mix of agricultural, commercial, and residential. The main and satellite areas were fenced prior to remediation, but since the completion of the cleanup at those locations, the fence was removed. The Star Stone Company prevents access to its property and the Bennett's Dump site through the use of a gate on the main access road.

The groundwater aquifer underlying the site is currently not used as a drinking water source. Springs located on the Bennett's Dump site, however, result in groundwater flowing into Stout's Creek. Frequent fishing occurs about 3.5 miles downstream from the Bennett's Dump site.

History of Contamination

During the 1960's, a portion of the Bennett's Quarry was used as an uncontrolled dump for electrical parts and capacitors containing PCB dielectric fluid. The capacitors came from the Westinghouse Inc. (formerly CBS Corporation and now doing business as Viacom Inc.) capacitor manufacturing plant in Bloomington, Indiana. Monroe County first discovered the site and the U.S. EPA did an initial inspection on May 12, 1983. The initial condition of this site

indicated that most of the electrical parts visible at the site had been crushed, burned, or otherwise torn open with insulator wrapping paper, ceramic bushings, and other electrical parts scattered about the surface. Stained soil was also evident on the surface of the dump.

Initial Response

The Bennett's Dump site was first discovered by the Monroe County Health Department in 1983. The Monroe County Health Department requested a site assessment by the U.S. EPA in May 1983. Sampling showed that PCBs were found in large concentrations across the site and based upon the sampling data, an interim remedial measure was initiated by the U.S. EPA. The interim remedial measures included the following:

- Installation of a locked, 8-foot high chain link barbed wire security fence surrounding the three contaminated areas.

- A total of 252 visible capacitors were removed for off-site incineration and 20 cubic yards of stained soil were excavated and disposed of in an approved off-site landfill.

- A 16 to 22 inch clay cap and 6 inches of topsoil cover were installed over the main site.

The Bennett's Dump site was placed on the National Priorities List in September 21, 1984 and was one of the six sites included in the Consent Decree that was entered with the court on August 22, 1985. The Consent Decree called for the construction of a permitted, TSCA-approved, dedicated, municipal solid waste-fired incinerator to be used to destroy PCB contaminated soils and materials excavated from the six sites.

Public opposition to the incinerator arose before and after entry of the Consent Decree. Applications for the necessary permits to design and build the incinerator were submitted by Viacom in 1991. Beginning in 1991, the Indiana State Legislature passed several laws intended to delay and block the implementation of the incinerator remedy required in the 1985 Consent Decree. In February 1994, the parties agreed to jointly explore, under the operating principles alternatives to the incineration remedy

A second phase of interim measures began in 1987 pursuant to requirements in the August 1985 Consent Decree. The second phase included installing an additional cap area at the edge of the main site and posting warning signs. Also, in September 1988, Viacom removed sediments along 1,800 feet of Stout's Creek. The contaminated sediment was transported to the Interim Storage Facility at the Winston Thomas site for storage. The contaminated sediments from Stout's Creek and PCB contaminated material from other interim measures at the other Consent Decree sites were subsequently removed to an approved off-site landfill in February 1998 pursuant to time critical removal action.

Based upon the operating principles that were agreed to in February 1994 and the court order

requiring completion of source control remedy by December 31, 2000, the U.S. EPA on August 21, 1998, made available to the public the proposed plan for the Bennett's Dump site. The governmental parties concurred on the Record of Decision (ROD) Amendment and the document was signed by the U.S. EPA on October 16, 1998.

Basis for Taking Action

At the Bennett's Dump site, PCBs are the main contaminant of concern. PCBs have been discovered in soil, sediment and in groundwater. Due to the karst geology, groundwater discharges through a series of springs located on-site. Diesel fuel which contains benzene, toluene and xylene were also discovered in groundwater.

Prior to remediation, soils on the Bennett's Dump site presented a significant risk to human health and the environment. Prior to remediation, fish tissue analysis and sediment sampling within Stout's Creek demonstrated risk to ecological receptors. Groundwater which emerges from a series of springs on the Bennett's Dump site continues to show PCBs after the completion of the remediation.

IV. Remedial Actions

Remedy Selection

The ROD Amendment for the Bennett's Dump site was signed on October 16, 1998. The objective of the cleanup was to remediate the site to low occupancy/industrial standards for possible reuse. Based upon groundwater monitoring data prior to remediation, the expectation was that the large source removal would reduce and subsequently eliminate the discharge of PCBs from the springs on the Bennett's Dump site. In addition, the release of PCBs into Stout's Creek since the interim sediment cleanup in 1988 indicated that additional sediment cleanup was required in Stout's Creek.

The major components of the site remedy selected in the ROD Amendment include the following:

1. Excavation and off-site disposal in a permitted, commercial chemical waste/Toxic Substances Control Act landfill of approximately 55,000 cubic yards of contaminated soils containing PCBs in excess of 25 parts per million (ppm) on average.

2. Excavation and off-site incineration in a permitted, commercial incinerator of capacitors containing PCB oil.

3. Long-term groundwater monitoring and implementation of deed restrictions.

Remedy Implementation

In the August 1985 Consent Decree, Viacom Inc. (formerly Westinghouse Inc. and CBS Corporation) agreed to build a municipal waste fired incinerator dedicated for the destruction of PCB contaminated material from six sites located in the Bloomington, Indiana area. It was estimated that 55,000 cubic yards of PCB contaminated material was located at the Bennett's Dump site and was to be treated by the municipal waste fired incinerator. Public opposition to the incinerator arose before and after entry of the Consent Decree. Applications for the necessary permits to design and build the incinerator were submitted by Viacom in 1991. Beginning in 1991, the Indiana State Legislature passed several laws intended to delay and block the implementation of the incineration remedy required in the 1985 Consent Decree. In February 1994, the parties agreed to jointly explore under the Operating Principles alternatives to the incineration remedy for the six sites.

Due to a lack of progress in developing new site remedies, in November 1997, Federal Judge S. Hugh Dillin issued a judicial order stating that the six Consent Decree sites must be remediated by December 1999. Judge Dillin also assigned Magistrate Judge Kennard Foster to oversee the progress of the parties toward meeting the December 1999 deadline. On February 1, 1999, Judge Dillin issued another Judicial Order approving and adopting Report and Recommendations of Magistrate Judge and Special Master Kennard Foster which extended the deadline for completion of the source control at the six sites by December 31, 2000. The source control remedies were completed by the December 31, 2000 deadline and Viacom and the governmental parties are in the process of negotiating a global settlement[2] for all the remaining issues for the six Consent Decree sites.

The Remedial Design/Remedial Action (RD/RA) Work Plan for the Bennett's Dump site which contained the design of the cleanup was approved on August 9, 1999. Construction began in mid-August and was the first phase of the cleanup was completed in November 1999. The project involved the following:

- Shipping a total of 36,157 tons of PCB contaminated material greater than or equal to 50 ppm to Environmental Quality Company's Wayne Disposal Landfill.
- Shipping a total of 1,756 capacitors weighing 118.72 tons to Onyx Environmental in Port Arthur, Texas for incineration.
- The site was backfilled with approximately 25,000 cubic yards of clean clay, graded for drainage and seeded for a minimum of 12 inches of clean cover.

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[2] The global settlement will include both technical and non-technical issues. Technical issues such as water remediation and sediment remediation remain to be addressed at Lemon Lane Landfill, Neal's Landfill and Bennett's Dump. Non-technical issues include the recovery of costs incurred by U.S. EPA and the governmental parties and compensation for natural resource damages.

The confirmation sampling showed that the arithmetic average of all the residual sample results was 11.3 ppm PCBs compared to the cleanup level of 25 ppm PCBs. At three locations, the excavation revealed deep quarry pits filled with rubble. The rubble consisted of large boulders and smaller, broken pieces of stone mixed with soil. At these locations, capacitor parts and PCB contaminated soils existed above the rubble. The capacitor parts and PCB contaminated soil were removed. During excavation, each of the excavations filled with groundwater that made contact with the rubble. The groundwater had a light sheen in some locations and one sample showed diesel fuel contaminated with PCBs. The water/oil mixture was pumped and treated to allow the excavations to proceed. The three areas may have been locations where capacitors were broken open and the PCB oil was drained onto the ground surface. Samples taken in the three areas at the bottom of the excavation revealed concentrations greater that the 50 ppm PCB maximum allowable limit. The governmental parties allowed the excavation to be terminated after removing as much material as possible due to the presence of groundwater and the depth of the excavation. The final sampling in the grids where the three areas were located showed residual PCB contamination of 33 ppm, 25.3 ppm and 162 ppm.

A second phase of work which included a small sediment and bank cleanup in Stout's creek was completed in September 2000. A total of 10 cubic yards of sediment was removed so that residual levels were under 1 ppm PCBs.

The site achieved construction completion status when the Preliminary Close Out Report was signed on September 25, 2000. An interim Groundwater Monitoring Program was implemented prior to the start of the remedial action and was replaced by the Long-Term Groundwater Monitoring Plan in April 2002.

Operation and Maintenance

Since the removal of the contaminated soil and capacitors from the site in November 1999, groundwater PCB-contamination levels at the site have not improved as was expected. Four springs at the Bennett's Dump site include Middle Spring, Mound Spring, Mid North Spring and North Spring. See Figure 2. Observations and measurements indicate that Middle Spring flows continuously, except during very dry periods and Mound Spring, Mid-North and North Spring flow intermittently. All four springs have shown PCB contamination. In addition, groundwater monitoring wells have also shown PCB contamination.

The U.S. EPA and the other governmental parties have been discussing with Viacom the continuing release of PCBs into Stout's Creek through the springs. Viacom has stated that it will do additional investigations on the groundwater but it is not required to complete any additional cleanup work. The U.S. EPA and the other governmental parties do not agree with Viacom's claim. The implementation of additional work, if required, will be discussed in the global settlement. A Groundwater Investigation Plan has been approved by the governmental parties and the information from the investigation will be used to determine if any additional work is

required at the site. Draft deed restrictions for the Bennett's Dump site have been submitted to the governmental parties by Viacom but will not be approved until the groundwater investigation has been completed and a determination if additional work is required.

V. Progress Since the Last Five-Year Review

This is the first five-year review for the site.

VI. Five-Year Review Process

Administrative Components

The U.S. EPA has given a Technical Assistance Grant (TAG) to the group Citizens Opposed to PCB Ash (COPA) and a Citizens Information Committee (CIC) has been formed to disseminate information regarding the Consent Decree sites and the PCB issues in Bloomington, Indiana. Public Meetings are held at least 4 times per year and the meetings are filmed for broadcast over the Bloomington cable access television. The CIC group was notified on November 19, 2001 that a five-year review was underway for the Bennett's Dump site. The State of Indiana and Monroe County have reviewed the five-year review.

Community Involvement

The U.S. EPA notified Michael Baker of COPA, through correspondence dated February 11, 2002 that a five-year review was going to be completed for the Bennett's Dump site. A discussion took place at the CIC meeting on November 19, 2002 describing the five-year review process. In addition, a notice was placed in the Bloomington Herald Times stating that a five-year review was being conducted. During the CIC meeting, a number of community members expressed concern regarding the continuing release of PCBs into Stout's Creek and the protectiveness of the site remedy. On February 22, 2002, the U.S. EPA received through E-mail a letter from COPA urging the parties to complete a hydrogeologic investigation at the site.

Document Review

The five-year review consisted of a review of past and present groundwater monitoring data and hydrogeological data.

Data Review

The October 16, 1998 ROD Amendment called for the excavation of the Bennett's Dump site to 25 ppm PCBs and the placement of a one-foot soil cover over the former dump. The cleanup achieved an 11.3 ppm PCB concentration on average. The U.S. EPA and the other parties believed that the levels of PCBs in the groundwater at the site would decrease to acceptable levels due to the large scale source removal. Based upon the pre-remediation groundwater data,

the U.S. EPA expected that PCB contaminated seeps or springs would be reduced or eliminated. The monitoring conducted after the construction completion has shown that the PCBs in the springs at the site have neither been reduced nor eliminated, but instead continue to be released from the springs into Stout's Creek. The U.S. EPA also reviewed information from early site visits and investigations in an effort to better understand what may be causing the current unexpected releases to Stout's Creek.

In 1983, the On-Scene Coordinator (OSC) for the U.S. EPA during the initial site assessment observed a small pond, possibly a spring on the eastside of the fill, an adjoining pond draining west toward Stout's Creek and a small pond along the west border of the site. Based upon the map in the OSC report, the first pond may correspond to Mound Spring and the third spring may correspond to Middle Spring. The Consent Decree required that Viacom perform a Supplemental Hydrogeologic Investigation at the Bennett's Dump site in 1986. The 1986 report did mention seeps on the Bennett's Dump site but the report focused on monitoring wells. The report also stated that the flow direction of groundwater was west-northwest toward Stout's Creek and groundwater was discharging into the creek. The rock fractures observed from the well drilling video logging did not indicate that any major conduits were intersected.

In 1984, an aerial photography analysis was completed which showed 1939 photographs of the quarries where the PCB contamination was discovered at depth in the 1999 remediation. The quarries were part of a complex of large quarry pits that extended toward the satellite area and Icebox Quarry. The aerial photographs also show that there are a number of quarry pits upgradient of the Bennett's Dump site to the east and south that have since been filled in.

Groundwater and Surface Water Monitoring

Monitoring has consisted of sampling monitoring wells, Stout's Creek (both upstream, downstream, and the west branch of Stout's Creek), and all flowing springs. Table 2 shows the historical groundwater monitoring data and Charts 1 through 6 show a graphical representation of the historical groundwater/surface water sampling data.

During the remediation activities in 1999, the PCB levels in groundwater increased due to the cleanup activities but concentrations have dropped since the completion of the cleanup activities, however, the data does not show an overall decreasing trend at this time. Post-remediation PCB levels in groundwater monitoring wells and springs have still shown PCB contamination. The groundwater/surface water data has produced variable PCB analytical results and does not show an overall decreasing trend. Due to the release of PCBs from the springs into Stout's Creek and the road construction surrounding the site which has affected groundwater, Viacom has agreed to investigate the hydrogeology of the Bennett's Dump site to further understand how the hydrogeology surrounding the site is affecting on-site springs. The Groundwater Investigation Plan was approved on April 22, 2002, and includes the following objectives:

- Further define the site hydrogeology and recharge area to understand the relationships

between the groundwater elevations, water levels in the open quarry pits and spring flows at the site.

- Obtain enough data to estimate the mass loading of PCBs to Stout's Creek under varying hydrologic conditions by determining the water flows and PCB levels of the various springs.

- Determine the impact of the I 37/ 46 highway construction on the local site groundwater flow. As part of the highway construction, water filled quarry pits were filled and surface water run off flows were modified. These changes have affected the Bennett's Dump site groundwater levels and spring flows.

Risk assessment activities using sampling data and fish tissue analysis in conjunction with the groundwater investigation data will be used to determine the next course of action regarding the continued release of PCBs at the site.

Site Inspection

A number of site inspections have been completed at the Bennett's Dump site, with the latest inspection occurring on July 10, 2002. The U.S. EPA and IDEM were present at the inspection and observed how the spring flow measuring devices were installed. The U.S. EPA and IDEM monitored site erosion. Viacom continues to monitor site erosion and has implemented erosion control measures near mid-north, middle and mound springs. Viacom has removed a large beaver dam on Stout's Creek which could have created erosion issues for the soil cover over the site. Viacom must continue to monitor the erosion of the soil cover and improve the vegetative layer to ensure the soil cover remains in place as described in the ROD Amendment.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

The remedial action described in the ROD Amendment was implemented and has met the cleanup objectives for the site soils. The continuing release of PCBs from the springs into Stout's Creek is a major concern and must be evaluated. Viacom has agreed to investigate the site as described in the Groundwater Investigation Plan, dated April 2002. Evaluation of the human health and ecological risks associated with the continuing release of PCBs into Stout's Creek will occur after the data from the groundwater investigation plan has been evaluated. If the risk assessment shows an unacceptable risk, further work will be required.

Deed restrictions for the Bennett's Dump site have not been finalized by the governmental parties due to the continuing release of PCBs from the springs into Stout's Creek.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Applicable or relevant and appropriate requirements (ARARs) for the soil contamination as described in the ROD Amendment have been met. No new standards or to be considered criteria have been developed since the ROD Amendment. ARARs for surface water, specifically 327 IAC 2-1-6 - Surface Water Quality Standards has been exceeded downstream of the site for PCBs during monitoring 8 times out of 17 samples from August 1999 to January 2002.

Changes in Exposure Pathways, Toxicity and Other Contaminant Characteristics

The land use at the Bennett's Dump site is expected to remain classified as industrial/commercial. The new I 37/46 bypass may increase development in the surrounding area which could be a mix of industrial and residential development. Because the release of PCBs are continuing into Stout's Creek, human health and ecological routes of exposure or receptors may have changed in a way that could affect the protectiveness of the remedy but this is unknown at this time. The new I 37/46 bypass and the drainage from the new highway has affected the hydrogeology since the surrounding quarries are being used to store drainage from the highway. Understanding how the groundwater flows in and around Bennett's Dump is a critical part in determining if additional work is required to address the continuing release of PCBs from Bennett's Dump into Stout's Creek.

The toxicity factors and contaminant characteristics have not changed in a way that could affect the protectiveness of the remedy. In addition, risk assessment methodologies have not changed in a way that could affect the protectiveness of the remedy.

Expected Progress Towards Meeting the Remedial Action Objectives

The remedy implemented for the Bennett's Dump site is not progressing as expected. Even though groundwater was contaminated prior to remedy implementation, the excavation to industrial/commercial PCB standards was expected to reduce and eventually eliminate the PCBs from the springs on the Bennett's Dump site. Monitoring data has not shown a reduction in PCB concentrations in groundwater since the cleanup was completed.

Levels greater than 0.1 ppb PCBs have been detected periodically downstream in Stout's Creek. The detections are greater than the National Ambient Water Quality Criteria as described in 40 CFR 129.105. See Chart 1.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

The continuing release of PCBs into Stout's Creek from the springs on the Bennett's Dump site could affect the protectiveness of the site remedy. Scheduled investigations will produce

additional information which could call into question the protectiveness of the remedy.

VIII. Issues

Table 3

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Erosion of soil cover and lack of vegetation in patches	N	N
Continuing release of PCBs from the springs onsite into Stout's Creek	Unknown	Unknown
Finalize Deed Restrictions	N	Unknown

IX. Recommendations and Follow-up Actions

Table 4

Issue	Recommendations Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness	
					Current	Future
Erosion of soil cover and sparse vegetation	Repair soil cover and reseed portions of site; frequent inspections to identify problems early; liner added over soil cover to prevent erosion from flowing springs	Viacom	EPA	6/30/02 (Finished)	No	No
Poor drainage with surface water onto the sites soil cover	Improve site drainage by off-site channeling surface water around site	Viacom	EPA	6/30/02 (Finished)	No	No
PCBs released from springs onsite into Stout's Creek	Investigate site hydrology	Viacom	EPA	8/31/03	?	?
PCBs released from springs onsite into Stout's Creek	Modification of the Bennett's Dump ROD Amendment	EPA	State	12/31/03	?	?

X. Protectiveness Statement(s)

Due to the continuing release of PCBs into Stout's Creek, a protectiveness determination cannot be made at this time. Further information is required and is being completed under the U.S. EPA approved Groundwater Investigation Plan and Groundwater Monitoring Plan. The groundwater investigation should be completed within one year from the date of this Five-Year Review. A protectiveness determination will be made within 18 months from the date of this Five-Year Review.

XI. Next Review

The next five-year review for the Bennett's Dump site will occur in June 2007, or sooner.

Table 2 - Groundwater and Surface Water Monitoring Results

Date	PCB Concentration, parts per billion (ppb)									
	Monitoring Wells			Stout's Creek			Springs			
	MW-6I	MW-6D	MW-3	SC-US	SC-DS	SC-WB	Middle	Mound	Mid-North	North
02/12/99							2.8			5.5
08/25/99	0.11/ 0.11	58/2.6J		BDL	BDL	0.14				
08/26/99			BDL							
11/11/99	0.13	7/6.2		BDL	BDL					
11/12/99			BDL			BDL				
01/27/00			BDL	BDL	0.3J	0.02J				
01/28/00	BDL	6.2/5.9								
02/24/00							4.4			
03/30/00	BDL	11/9.8	BDL			BDL	3.7	0.73		
03/31/00				BDL	BDL					
05/16/00				BDL	0.085J	BDL	4.7			
06/23/00	0.29	12	BDL	BDL	0.24/ 0.23J	BDL	1.3	1.9	2.6	
10/03/00	0.17	15/13	BDL	BDL	0.21J	0.15J	13	2.6		
12/20/00				BDL	0.18J		8.9	NS		
12/21/00						BDL				
02/23/01	1.2	9.2	BDL	BDL	0.13J	BDL	4.1	1.2		
04/11/01				BDL	BDL	BDL	4.8	NS		
06/12/01	0.42	10/9.3	BDL	BDL	0.25	BDL	1.8	7.3		
08/07/01				BDL	0.31/ 0.39	BDL	1.2	NS		
09/18/01	0.65	12/11								
09/21/01			BDL (R)							
10/19/01				BDL	0.17	BDL	16/13	2.5	0.37	
12/07/01	2.8	13/14	BDL							
01/03/02				BDL	0.35	BDL	3.6/3.2	0.97		

US - Upstream; DS - Downstream; WB - West Branch; J - Estimated Value; BDL - Below Detection Limit; R - Unusable Value; X/ Y - Duplicate Sample

Appendix A

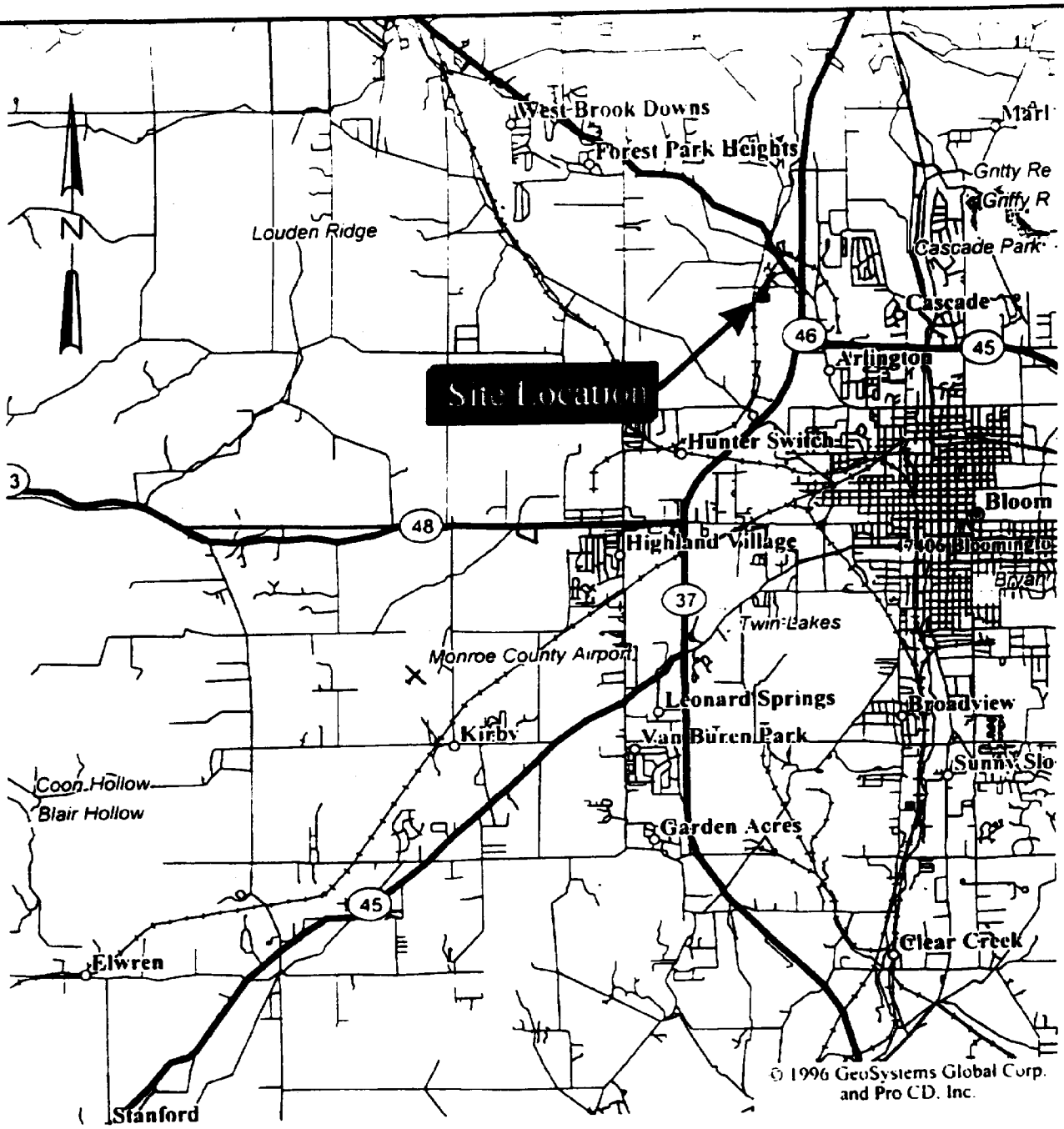

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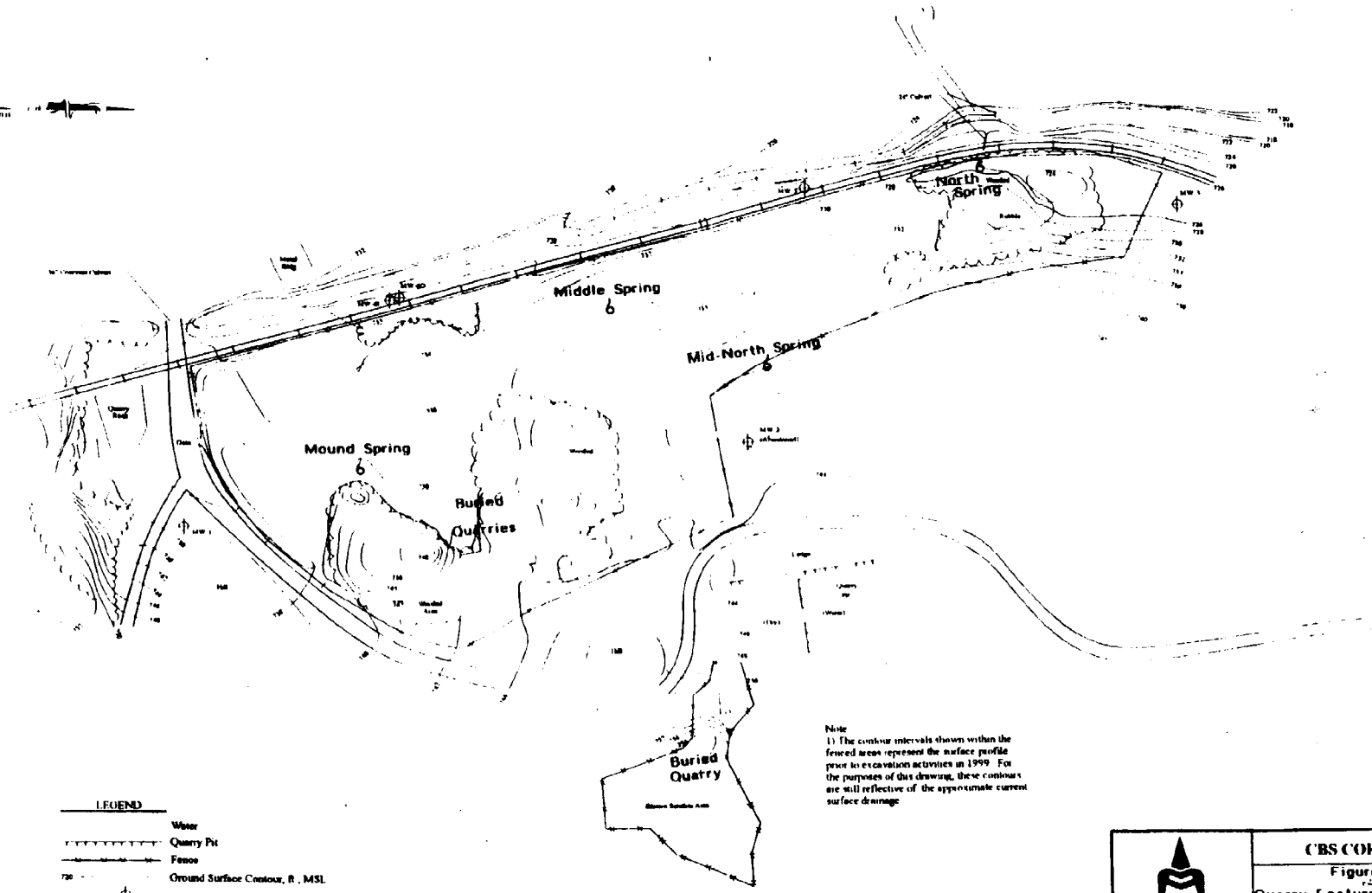
Figure 1.
Site Location Map
Bennett's Dump Site
Bloomington, Indiana

Drawn by:	Date:	Scale:
SAS	6/9/99	NTS



LEGEND

- Water
- Quarry Pit
- Fence
- 720 — Ground Surface Contour, ft . MSL
- MW-1 — Monitoring Well
- 50-ft-long Section for Delineation Composite Sampling

Note
1) The contour intervals shown within the fenced areas represent the surface profile prior to excavation activities in 1999. For the purposes of this drawing, these contours are still reflective of the approximate current surface drainage

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Figure

Quarry Features Bennett's Dun

Bloomington, Indiana

Drawn By	Date	Scale
SAS	4/24/00	

Chart 1 - Stout's Creek Downstream
Bennett's Dump Site

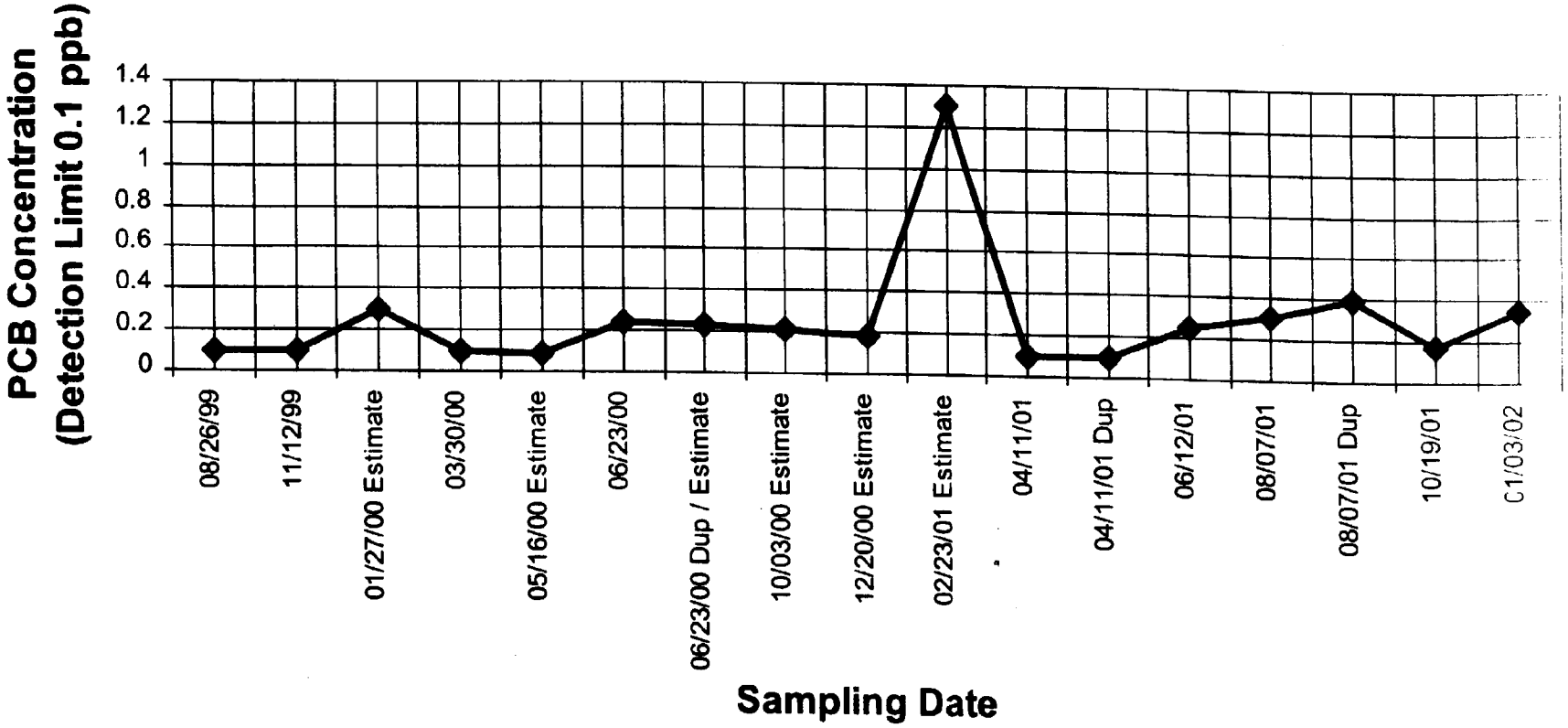

Chart 2 - Stout's Creek West Branch
Bennett's Dump Site

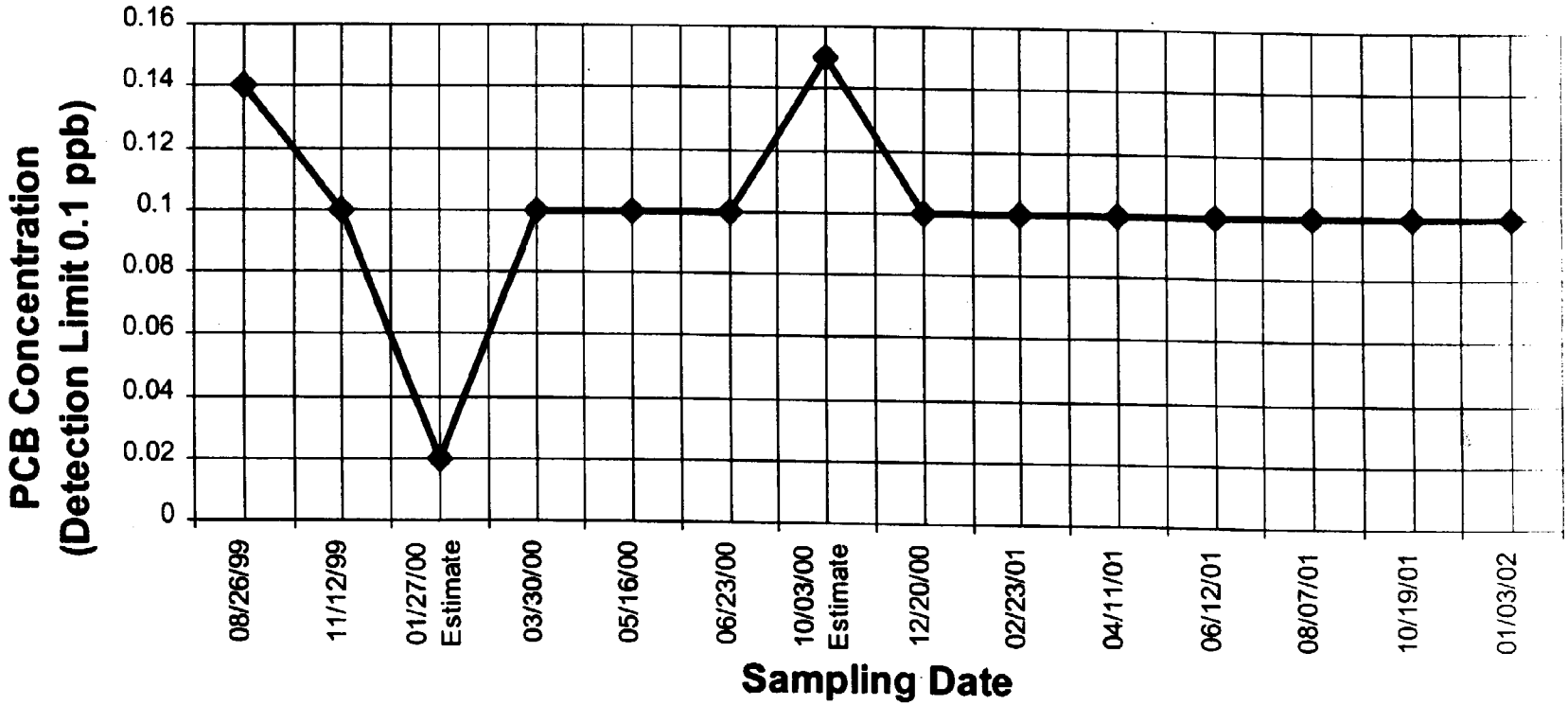

Chart 3 - Middle Spring
Bennett's Dump Site

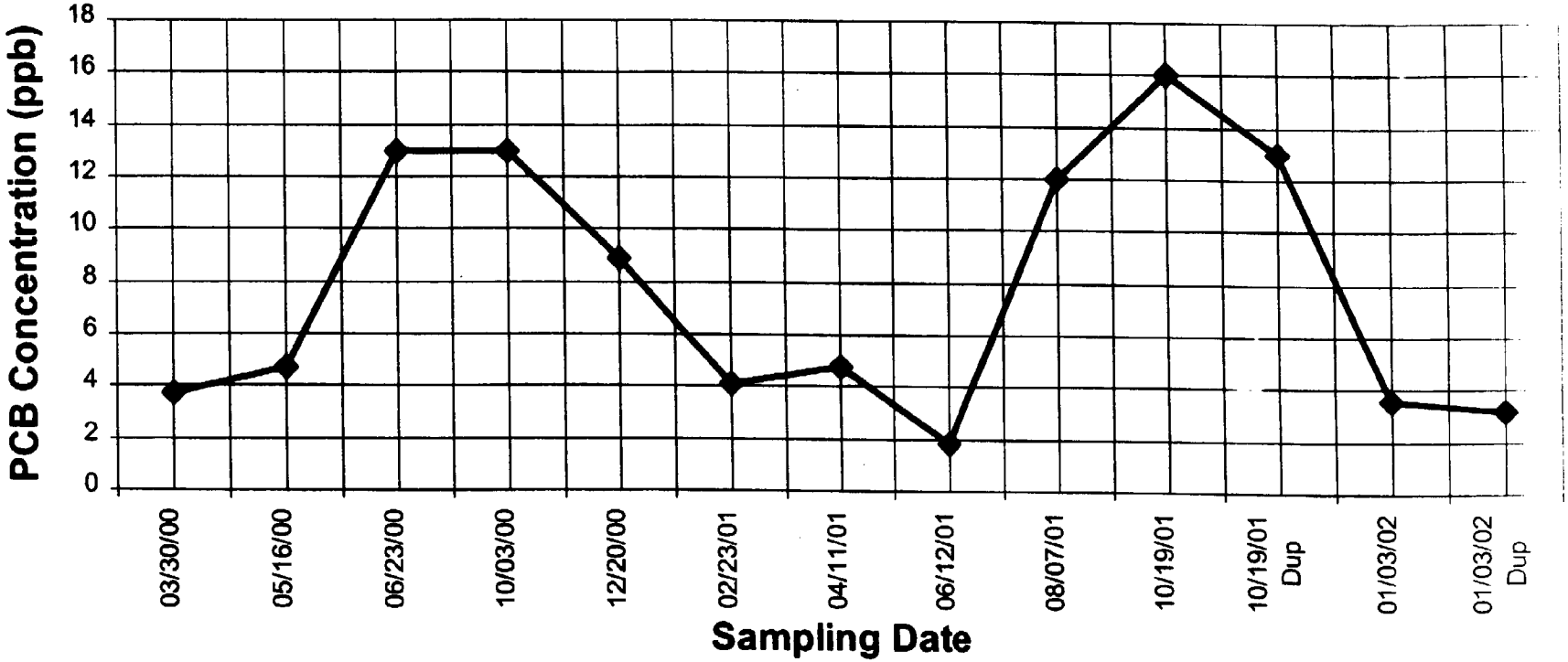

Chart 4 - Mound Spring
Bennett's Dump Site

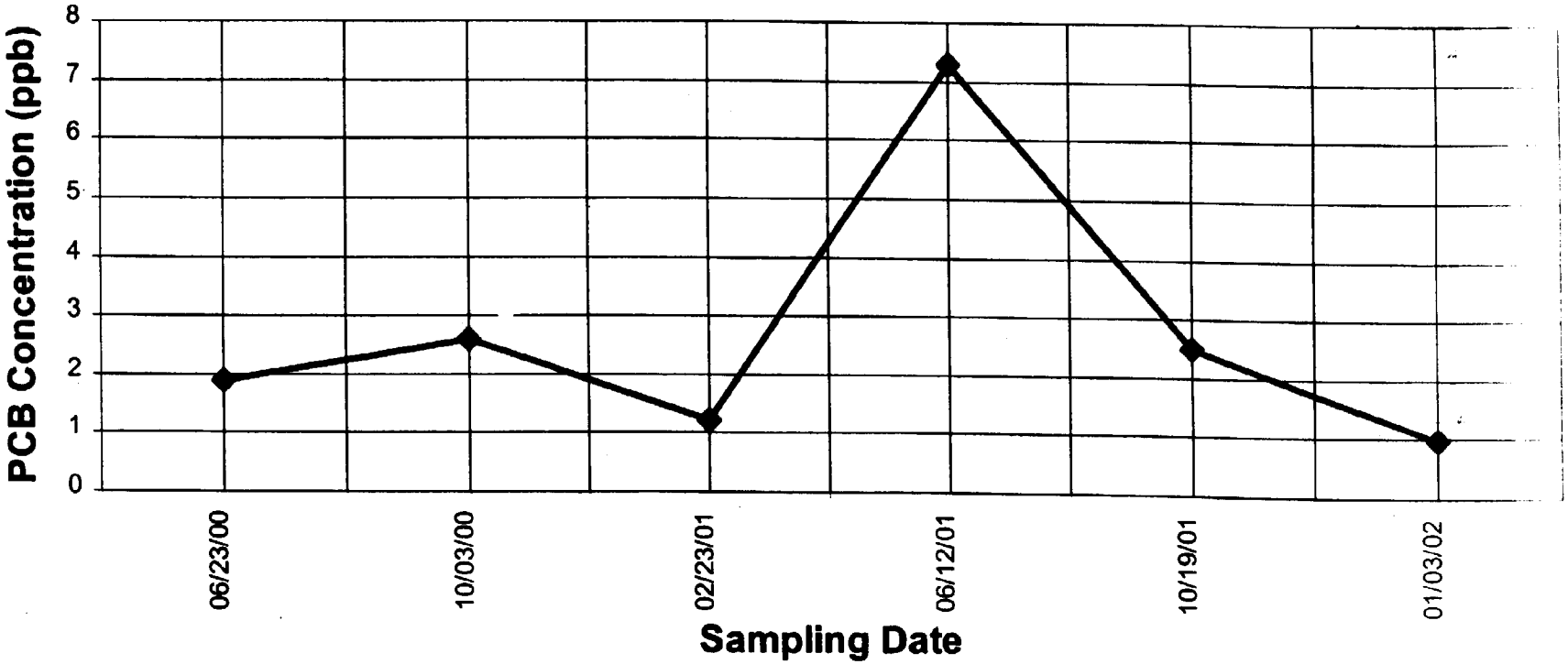

Chart 5 - Monitoring Well MW-6D
Bennett's Dump Site

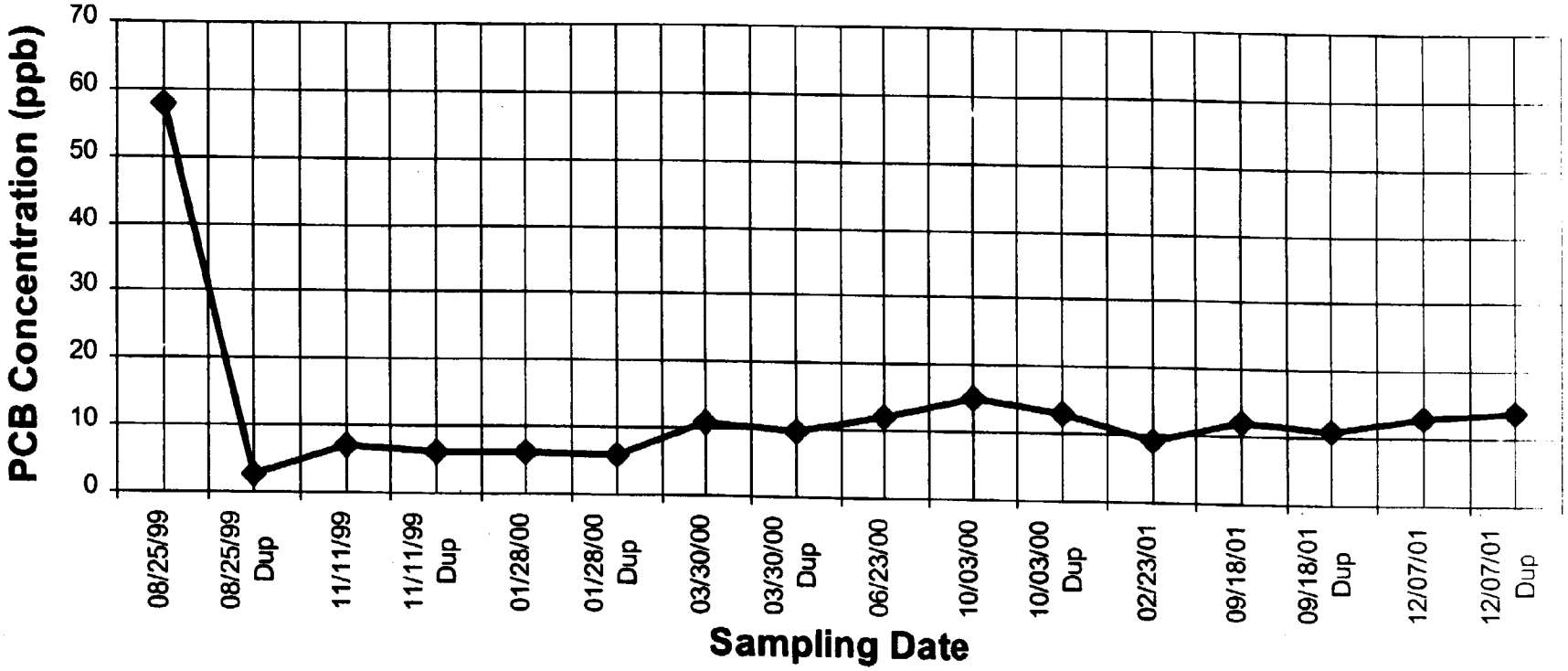

Chart 6 - Monitoring Well MW-6I
Bennett's Dump Site